

REMARKS

Applicants request entry of this amendment, reconsideration and allowance. In the office action mailed December 10, 2004, claims 1, 2, 5 and 6 were rejected under 35 USC § 102(b) based upon US Patent No. 5,859,387 (Gagnon). Claims 3 and 7 were rejected under 35 USC § 1032 (a) based on Gagnon and claims 4, 8 and 9 were rejected under 35 USC § 1032 (a) based on Gagnon and admitted prior art.

New claims are presented. In particular, independent claims 10 and 14 provide that the molded housing is continuous between adjacent leads inside the side surface of the packaged semiconductor device and is at least partially discontinuous between at least two adjacent leads in a region of the leads outside the side surface of the packaged semiconductor device. Dependent claims 12, 13, and 15-18 correspond to original claims 3, 4, and 6-9. Claims 19-33 are presented for the first time although dependent claims 34-36 correspond to claims 11-14.

Gagnon does not show or suggest a molded housing that is continuous between adjacent leads inside the side surface of the packaged semiconductor device and is at least partially discontinuous between at least two adjacent leads in a region of the leads outside the side surface of the packaged semiconductor device. In contrast, Gagnon has a continuous molded housing across the bent portions of his leads. See Figs. 6a and 6b where the bent portions of Gagnon's leads are entirely inside the housing and the housing is continuous between the leads at the side surface where the leads exit the housing.

The prior art in the specification does not show or suggest a molded housing that is continuous between adjacent leads inside the side surface of the packaged semiconductor device and is at least partially discontinuous between at least two adjacent leads in a region of the leads outside the side surface of the packaged semiconductor device. In Fig. 1 the bends are outside the molded housing and the housing at the side surface where the leads protrude is continuous in a direction transverse to the leads.

The applied art teaches away from the invention. Gagnon makes a large package because he encapsulates the bent portions of the leads. The prior art packages of Fig. 1 and Fig. 4 do not cover the outer bend portion of the leads. Taken together the references suggest fully encapsulating the bends or fully exposing them. The partial insulation that leaves air space between insulated ends of the leads is not shown or suggested by the prior art.

Independent claim 19 provides “at least one of the first. and second outer leads is covered by an extended portion of the molded housing where they are adjacent to the side surface of the molded housing.” That limitation is not shown in the art applied to the claims. Gagnon does not show or suggest an extended portion of the molded housing for covering portions of the leads adjacent the side surface. In contrast, the molded housing of Gagnon is flat, continuous and otherwise non-extended from the Gagnon side surface. The same is true of the package shown in Fig. 1.

Independent claim 33 provides for a region outside the side surface a portion of the molding housing that extends longitudinally from the side surface and covers a portion of the lead adjacent and outside the side surface. That same partially covered longitudinal portion extends laterally part way toward the adjacent lead but short of that lead to leave at least a partial void of molding housing in that lateral direction between said partially covered lead and said adjacent lead. This limitation is also not shown by Gagnon or the prior art referenced in the application.

In order to make a prima facie rejection under either 35 USC § 102(b) or §103(a) the reference must show or suggest each limitation of the claims. The art of record applied to the claims does not. As such, the independent claims discussed above are patentable. The references taken together do not suggest the invention. Gagnon discloses fully encapsulating the bent portions; Fig. 1 of the specification shows the bent portions fully exposed. Neither shows or suggests partially covering one or more of the leads with a portion of the molded housing that extends from the side surface of the molded package. Likewise, none of the art applied to the claims shows or suggests extending the molded housing longitudinally over a short region of

the lead proximate the side surface and less than fully across to an adjacent lead to leave a partial void of molded housing between the adjacent leads.

The dependent claims are patentable for the same reasons given above for the independent claims. Since the independent claim of each dependent claim is not shown, it follows that the further limitations of the dependent claims combined with the independent claims are not shown or suggested in the applied art.

Claims 11, 16 and 34 are patentable because Gagnon does not show bent portions outside the side surface.

Claims 12, 17 and 35 are patentable. The art does not show extending the molded housing and does not show the claimed 1mm extension.

Claims 13 and 36 are patentable over the art of record. The rejection is erroneous because the Applicants did not admit that depressions were prior art.

Claim 15 is patentable. No art applied shows an extended portion of the molded housing covering a lead at the side surface.

Claim 18 is patentable. No art applied shows varying the thickness of an extended portion of the housing. The rejection of prior claim 9 relied upon speculation that one skilled in the art may alter the thickness of the package. However, that is not the subject matter of claim 18. Instead, claim 18 calls for the thickness of the extension of the housing around the lead to be less than the width of the lead. This is not shown or suggested.

Claim 20 is patentable over the applied art. No art shows one lead covered with an extended housing and the bent portion of the second lead outside the side surface.

Claim 21 is patentable over the applied art. No art of record shows or suggests the claimed relationship where as the distance between the first outer lead and the inclined portion of the other leads becomes greater, the distance between the inclined

portion and the side surface becomes smaller. See Fig.7 and note how the distance d increases as one gets closer to the side surface 112. This feature is not shown in the art of record.

Claim 22 is patentable over the applied art. As stated above, the applied art of record does not show or suggest the claimed depression limitations.

Claim 23 is patentable over the applied art. The space between leads at the side surface is increased by the bent second lead.

Claim 24 is patentable over the art of record for the same reasons as claim 21.

Claim 26 is patentable over the art of record for the same reason given above for claim 23.

Claims 27 is patentable over the art of record for the same reason given above for claim 24.

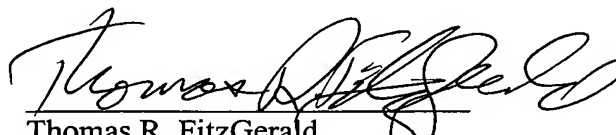
Claims 28 is patentable over the art of record for the same reasons as claim 18.

Claims 29-32 define non-molded spaces between at least one partially covered lead and the other leads. Such non-molded spaces or depressions in the molded housing surface are not shown or suggested by the prior art.

In summary, the invention is not show or suggested by the art applied to the claims. A notice of allowance is requested.

Respectfully submitted,

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